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Name.....

Reg. No.....

**EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE
[2014 SCHEME] EXAMINATION, APRIL 2018**

Civil Engineering

CE 14 802 – QUANTITY SURVEY AND VALUATION

Time : Three Hours

Maximum : 100 Marks

Part A

Answer any eight questions.

1. Write short notes on :
 - (i) Contingencies.
 - (ii) Work charged establishment.
 - (iii) Centage charges.
2. Differentiate between centre line method and long wall- short wall method.
3. Estimate the quantities of brick work and plastering required in a wall 4 m long, 3 m height and 30 cm thickness. Calculate also the cost if the rate of brickwork is Rs. 320 per cum and of plastering is Rs. 850 per sqm.
4. Write short notes on the following area measurement of a building :
 - (i) Plinth area.
 - (ii) Floor area.
 - (iii) Carpet area.
5. What are the factors to be considered in design of septic tank ?
6. A road is to be constructed in a side long ground partly in cutting and partly in banking. The formation width of road is 10 m, cross slope of ground is 6 : 1, side slopes in banking 2 : 1 and in cutting 1, depth at the centre is 45 cm although. Calculate the quantity of earthwork in banking and in cutting for a length of 200 m. Estimate the cost of making the formation of the road if the rate of earthwork is Rs. 1,500 per cum.
7. Write about schedule of rates.
8. Write about any *three* methods of calculating depreciation.
9. The capitalized cost of a building is Rs. 2.5 lakhs, including all fittings of first class construction. If the rate of interest is 8%, calculate the net return from the properties. Assume outgoings as 17.5% on gross income.

Turn over

10. Write short notes on :

- (i) Annuity.
- (ii) Capital cost.
- (iii) Capitalized value.

(8 × 5 = 40 marks)

Part B

11. Explain the different types of estimates.

Or

12. A single room building of size 5 m × 4 m has a wall thickness of 30 cm throughout. The depth of excavation is 90 cm. The first step of footing above the ground level is 40 cm wide and 60 cm deep. The second step of footing located below ground level is 50 cm wide and 30 cm deep. The third step of the footing is 60 cm wide and 30 cm deep. The width and thickness of PCC in foundation is 90 cm wide and 30 cm deep. The height of the single room is 3.50 m. The plinth portion for the single room building is 60 cm deep. Estimate the quantities of

- (i) Earthwork in excavation in foundation.
 - (ii) Concrete in foundation.
 - (iii) Brickwork in foundation and plinth ; and
 - (iv) Brickwork in superstructure.
13. Estimate the quantity of items of a R.C.C. Retaining wall. The length of the wall is 30 metres, the height of stem is 6 m, the width and thickness of heel slab is 165 cm and 50 cm respectively, the width and thickness of toe slab is 75 cm and 50 cm respectively. The diameter of main bars in stem is 20 mm and is at 100 mm c/c spacing. The diameter of distribution bars in stem is 12 mm and is at 200 mm c/c spacing. In the toe and heel slab the diameter of main bars is 16 mm and is at 100 mm c/c spacing and the diameter of distribution bars is 10 mm and is at 200 mm c/c spacing. Steel bars in reinforcement shall have to be taken separately.

Or

14. Determine the quantities of following work in the septic tank :

- (i) Earthwork excavation.
- (ii) Plain cement concrete 1 : 4 : 8.
- (iii) Brick in CM 1 : 5 in septic tank.
- (iv) RCC 1 : 2 : 4 in cover slab of septic tank.

The size of the septic tank is 4 m long, 2.4 m wide and 2.7 m deep. The baffle wall is located at a distance of 1.44 m from the left inner face of the tank wall. The thickness of the septic

tank is 0.23 m. The thickness of baffle wall is 115 mm. A 100 mm thick RCC slab is provided at the top. The brickwork is provided in 3 steps. The thickness of brickwork is 0.23 m, 0.345 m and 0.46 m from top. The depth of brickwork is 0.90 m, 0.75 m, and 0.75 m from top. The thickness of the PCC provided at the bottom is 0.30 m.

15. Calculate the quantity of materials required for the construction of 10 m^3 masonry wall (mix ratio of cement mortar is 1 : 5) and also calculate the quantity of materials required for plastering a wall of length 10 m and height 7 m (mix ratio of cement mortar is 1 : 3).

Or

16. Estimate the quantities of materials required for a R.C.C roof slab 12 cm thick with 1% reinforcement for a room having internal dimensions of 4.5×3.5 m. Estimate the cost of construction of the roof slab taking cost of stone aggregate as Rs. 315 per m^3 , river sand as Rs. 150 per m^3 , cement as Rs. 350 per bag, steel as Rs. 50 per kg and labour rate of laying including centering and shuttering etc. as Rs. 100 per cum of R.C.C. work.

17. Explain the different methods of valuation.

Or

18. Explain the steps involved in the calculation of standard rent for buildings.

(4 × 15 = 60 marks)